

NorthMet Mine EIS

EPA review – 90 days,
Regional team
Administrator's office review

- Proposal = EU-3
- Proposal + mine site alternative = EU-3
- Proposal + tailings basin alternative = EU-3

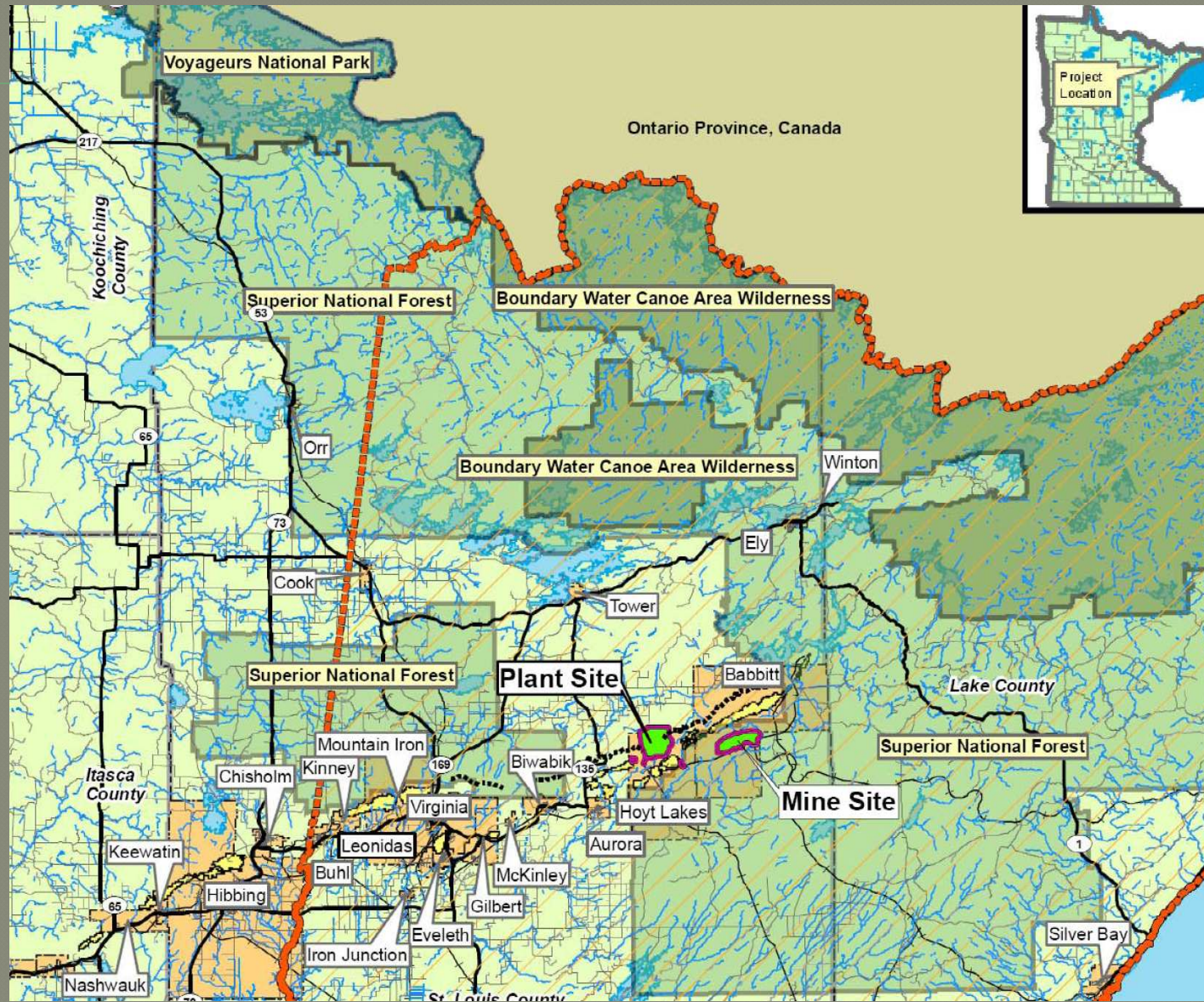
Not rated :

Proposal + tailings basin alternative + mine site alternative

Project

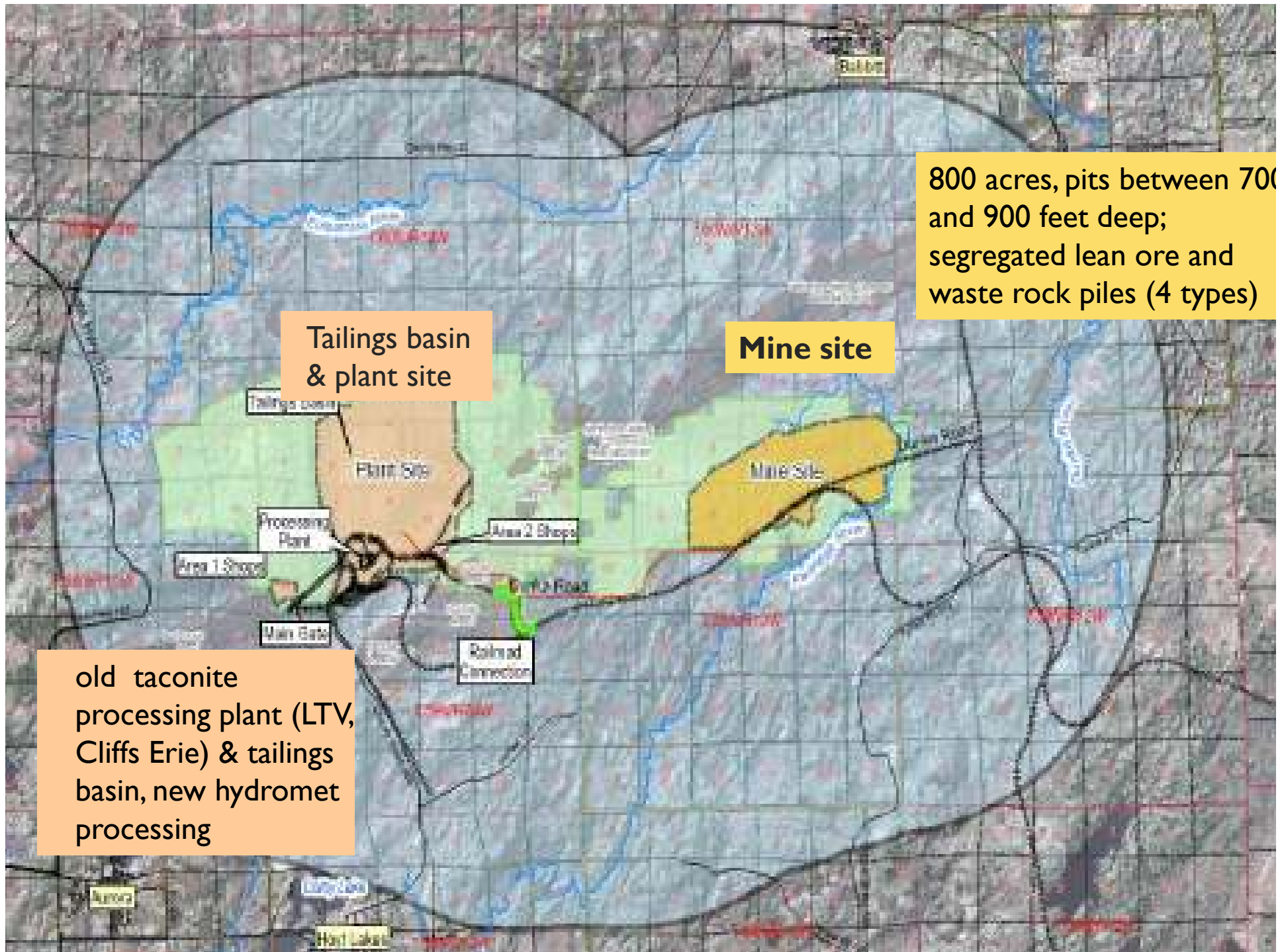
- **Surface mine for copper, nickel, and platinum group metallic ore: total 900 million ton deposit**
- **91,200 tons per day rock (av.)**
- **32,000 tons per day ore (av.)**
- **Mine life cycle = 20 years**

Location



Setting

- **Mesabi Iron Range**
- **Superior National Forest**
- **Wilderness areas, Class I**
- **Tribal ceded territory**
- **T&E: Canada lynx, grey wolf range**
(presence confirmed post-DEIS by FWS)
- **Existing infrastructure, processing plant**



800 acres, pits between 700 and 900 feet deep; segregated lean ore and waste rock piles (4 types)

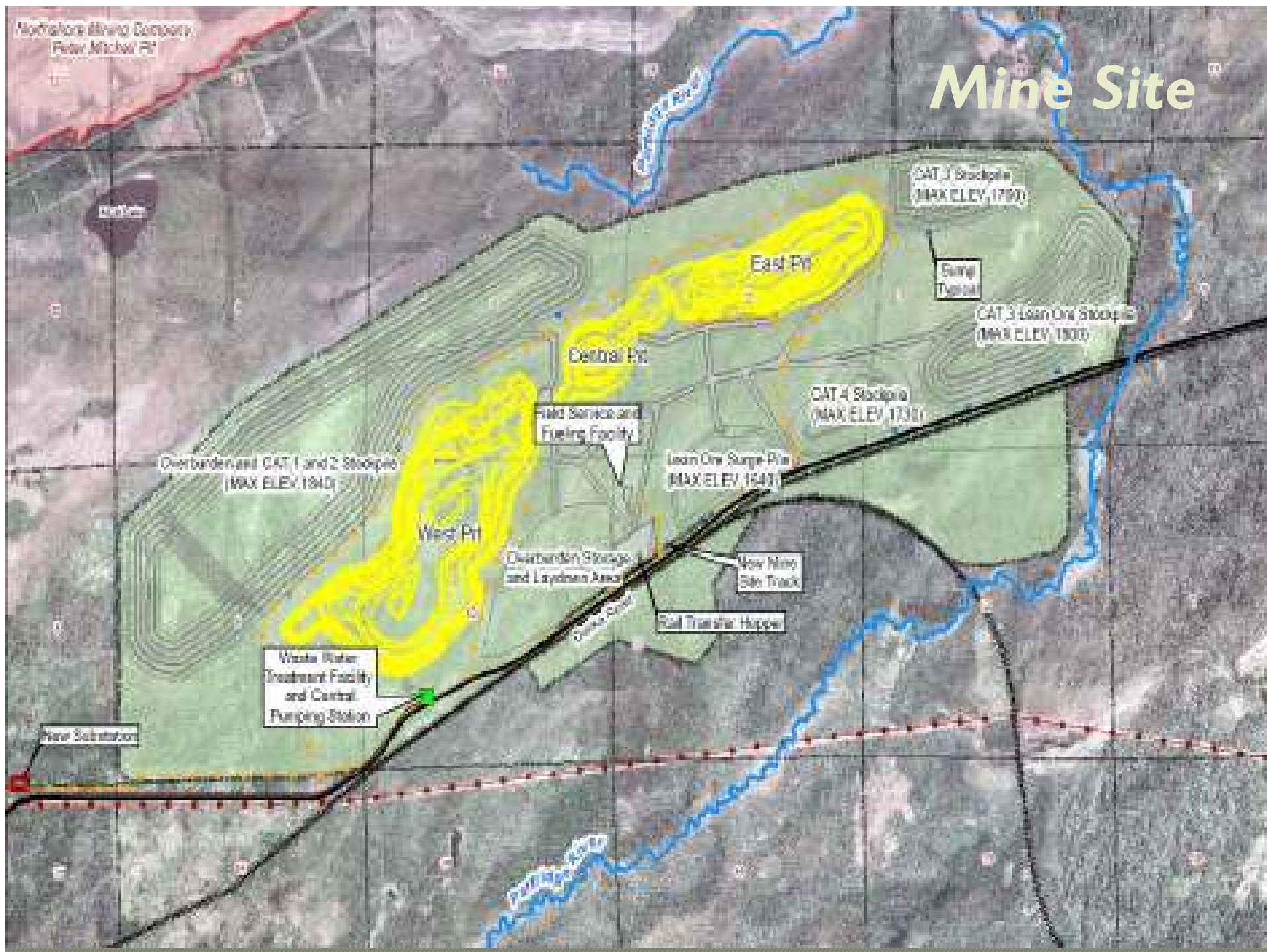
Mine site

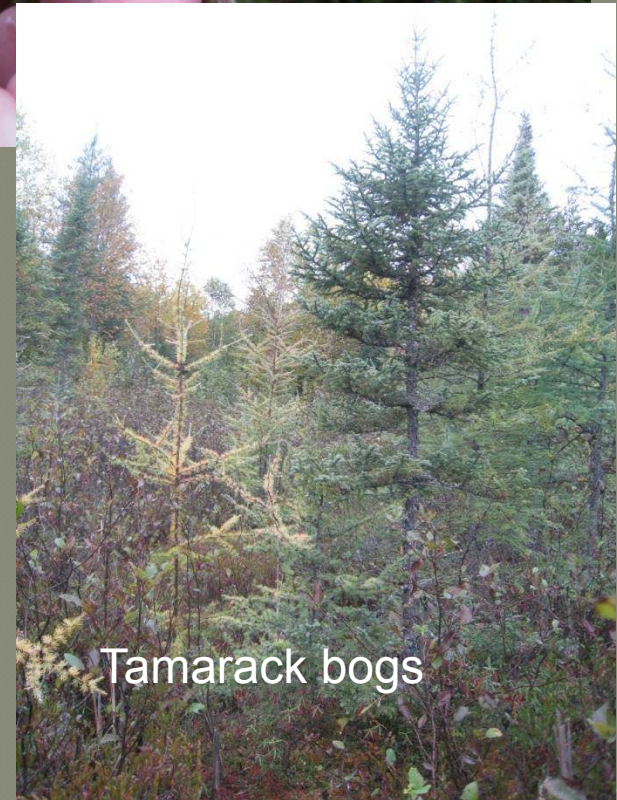
Tailings basin & plant site

old taconite processing plant (LTV, Cliffs Erie) & tailings basin, new hydromet processing



Taconite mining waste rock and
existing rail lines
(between plant site & mine site)





Mine Site

Labrador tea

Sphagnum moss
with wild cranberry plant

Tamarack bogs

Mine Site

- **USFS property transfer to PolyMet (land exchange)**
- **East and West Pits**
 - **On-site waste rock management**
 - **Backfill East Pit with waste rock (.6% S)**
 - **Surface stockpiling of higher sulfur waste rock (lined and capped)**
- **Concurrent reclamation**

Impacts & Alternatives

MINE SITE (DEIS)

- **Direct and indirect wetland impacts (approx. 1,173 acres)**
- **Potential loss of tribal access**
- **Stockpile leachate predicted to exceed State groundwater standards**
- **West Pit overflow likely to exceed surface water standards**
- **Reduces flow in lower Partridge River**

MINE SITE ALTERNATIVE (DEIS)

- **Backfill East Pit with higher sulfur waste rock (Category 4)**
- **Surface storage**

EPA Issues (DEIS)

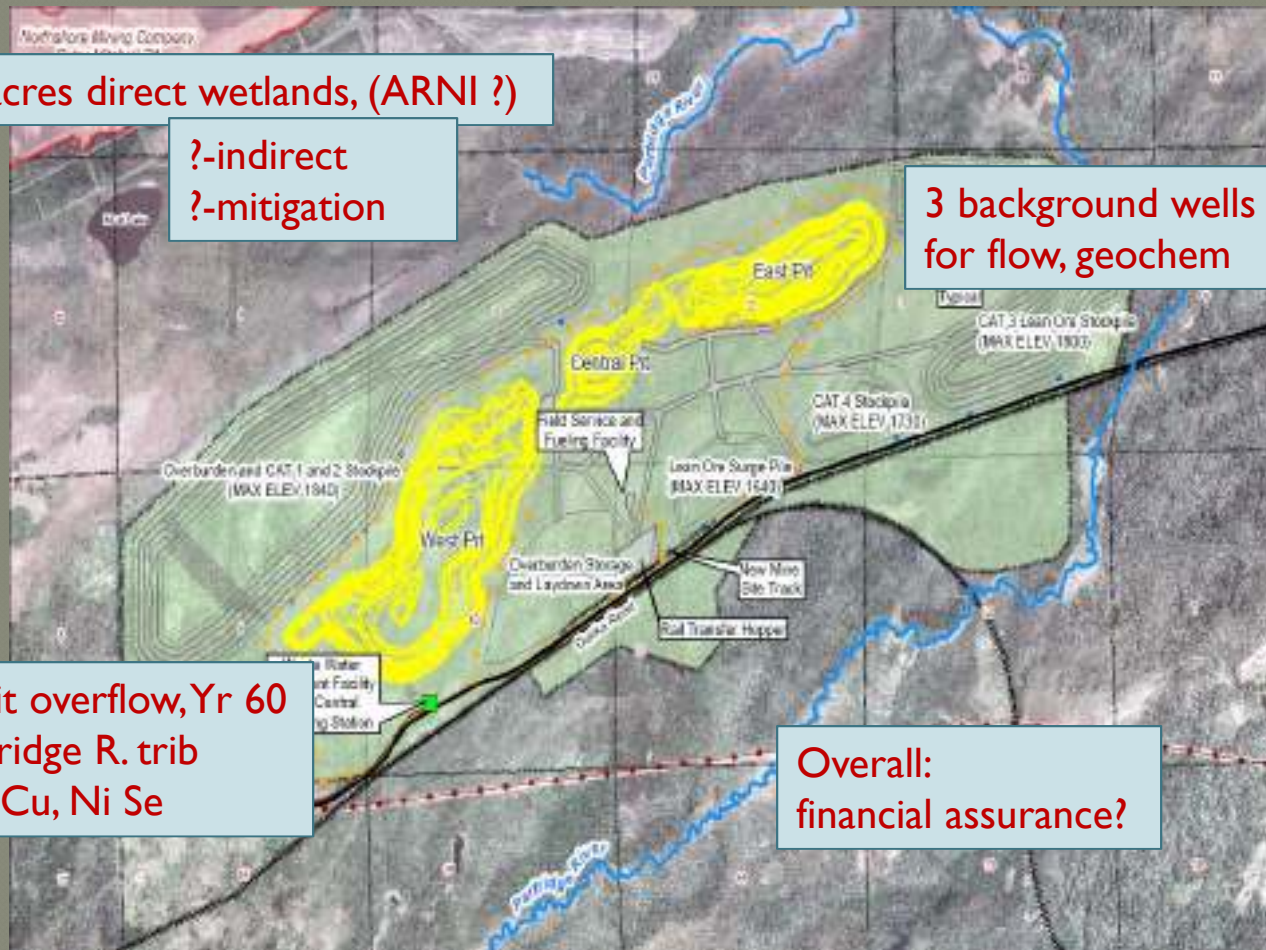
1,000+ acres direct wetlands, (ARNI ?)

?-indirect
?-mitigation

3 background wells
for flow, geochem

West Pit overflow, Yr 60
To Partridge R. trib
As, Co, Cu, Ni Se

Overall:
financial assurance?



EPA issues (DEIS) +DEIS statements re: management

1,000+ acres direct wetlands, (ARNI ?)

?-indirect
?-mitigation

New: Field verification: gw vs. sw wetlands

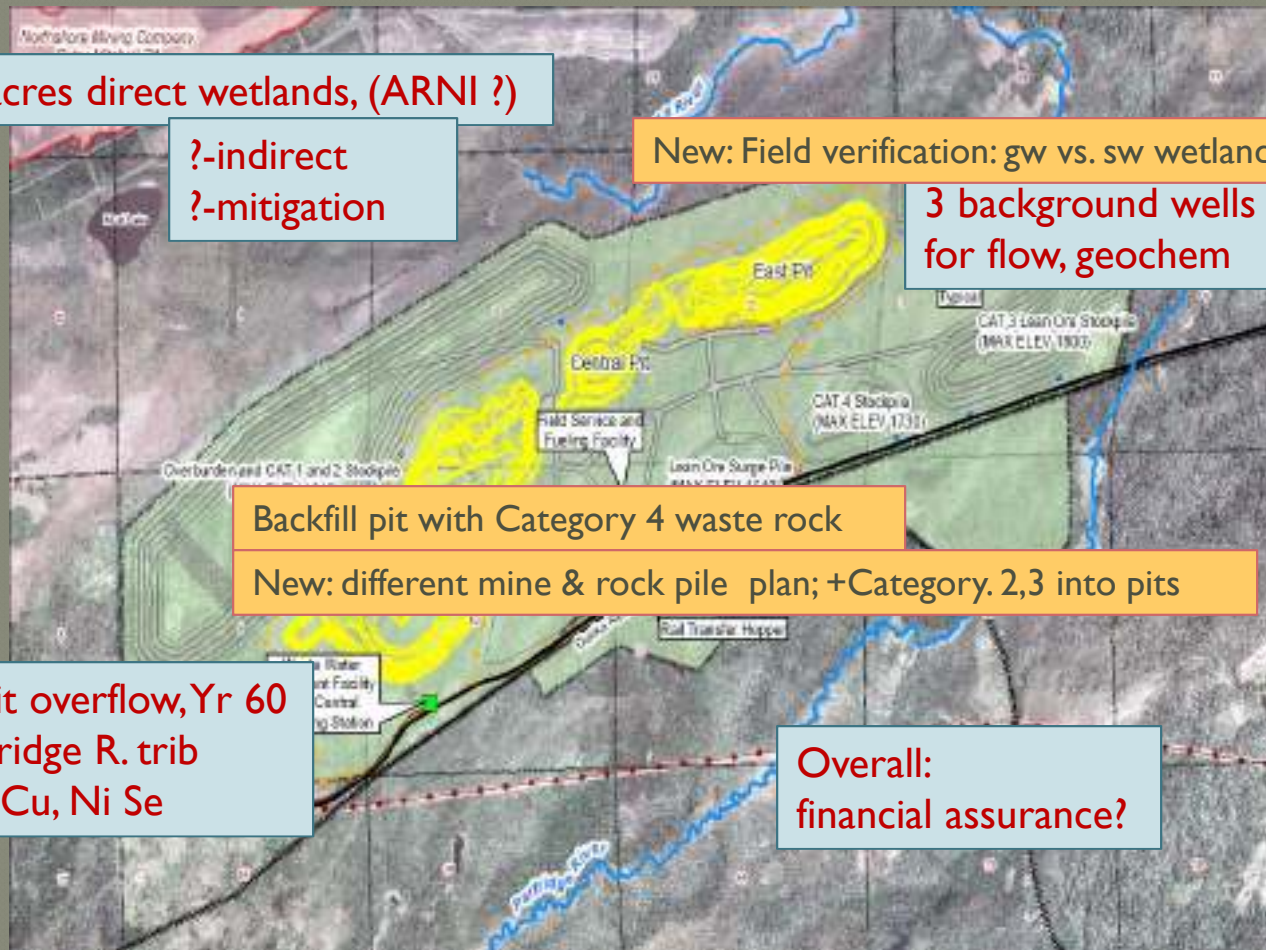
3 background wells
for flow, geochem

Backfill pit with Category 4 waste rock

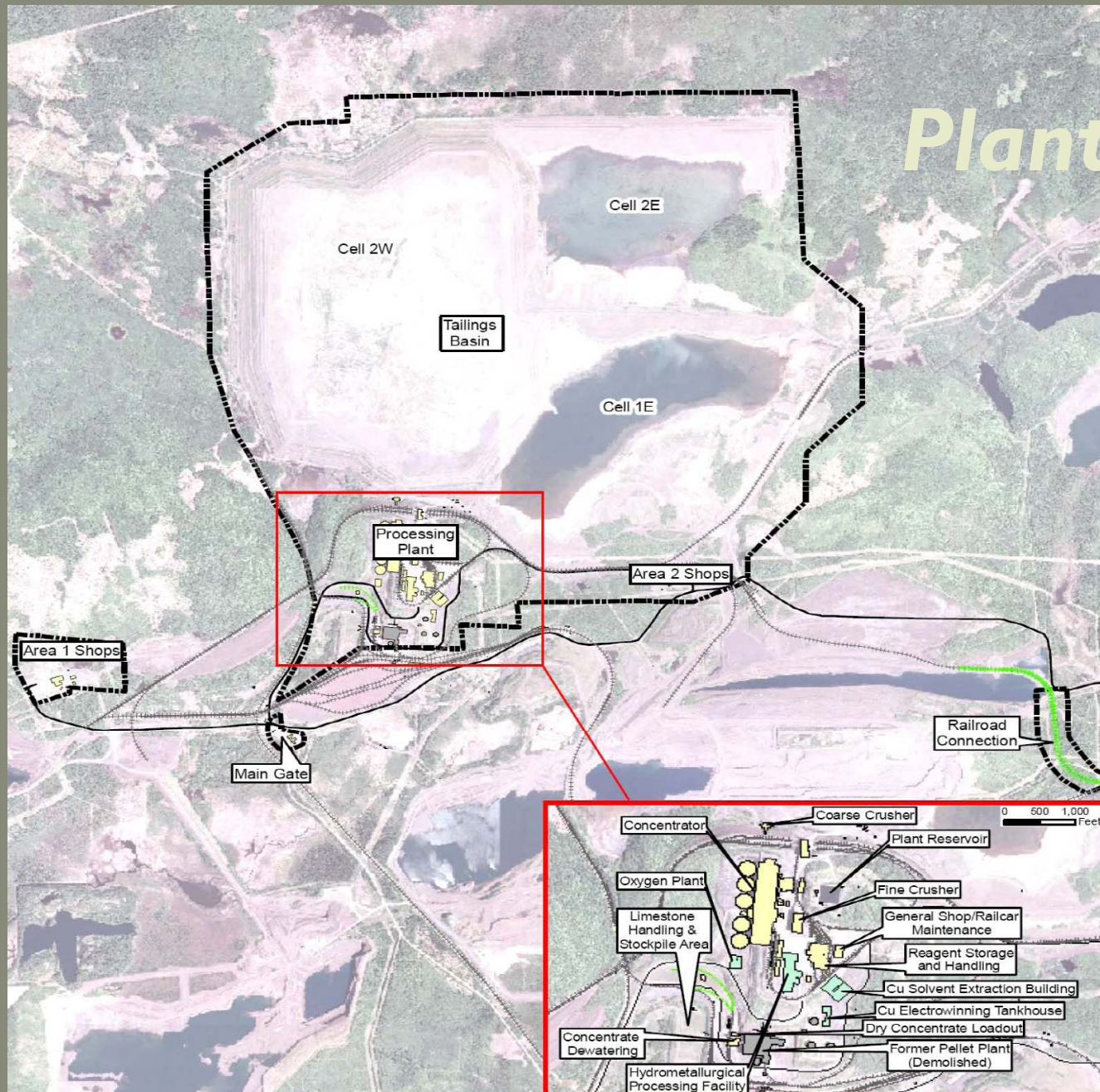
New: different mine & rock pile plan; +Category. 2,3 into pits

West Pit overflow, Yr 60
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Overall:
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Plant Site



Plant Site

- **Refurbish existing taconite plant**
- **Processing includes crushing, grinding, flotation,**
- **new hydrometallurgical facility – Cu electrowinning**
- **Rail car transport of products for sale**

Plant Site



Tailings Basin

- **Use existing tailings basin footprint (unlined)**
- **Hydrometallurgical waste cell in closed basin**
- **New residue storage**
- **Tailings Basin Alternative:**

Tailings Basin

TB – 2w



SW of TB-2W,
New site of
Hydromet waste facility





TB-2E

TB-1E

Impacts & Alternatives

TAILINGS BASIN (DEIS)

- Indirect impacts to 349 acres of wetlands
- Potential to form methylmercury in wetlands
- Potential to affect waters that contain wild rice (Embarrass River)
- increases flow in Embarrass
- Low margin of safety of embankments

TAILINGS BASIN ALTERNATIVE (DEIS)

- Install wells to capture seepage and
- recycle or discharge to Partridge River
- Enhance embankment rock buttress
- Cap embankment and beaches



Area 5 pit lake
1000 mg/L sulfate
(recent *Cliffs Erie consent decree*
stipulates treatment)

WQS exceedences in Embarrass R.:
Sulfate, (Se?, As? Sb?)

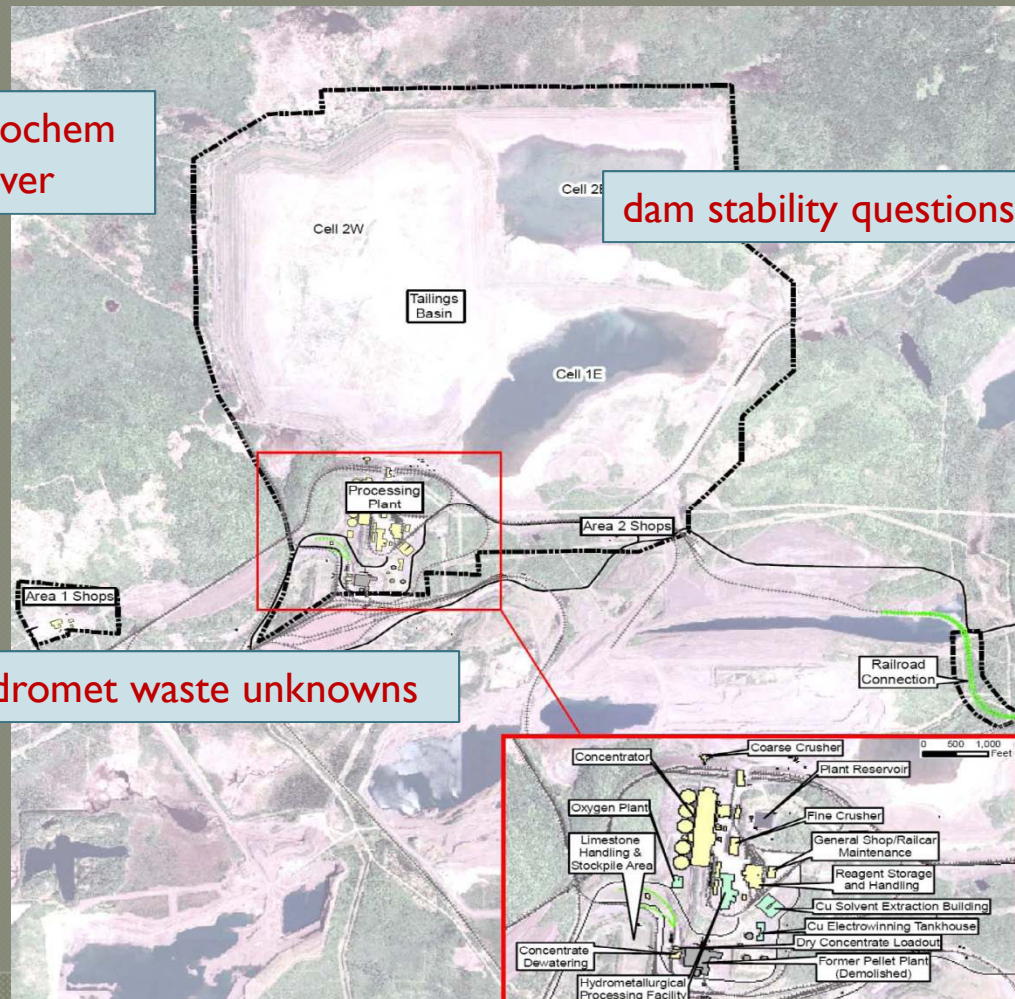
EPA issues (DEIS)

Application of wild rice
water sulfate standard?

3 wells for flow, geochem
between plant & river

dam stability questions

hydromet waste unknowns



WQS exceedences in Embarrass R.:
Sulfate, (Se?, As? Sb?)

EPA issues (DEIS)
+DEIS statements
re: management

Application of wild rice
water sulfate standard?

New: wild rice waters sulfate standard
applies....

New: WWTP for old pit sulfates
(Cliffs Erie consent decree)

3 wells for flow, geochem

New: 4 additional wells (Cliffs
Erie consent decree)

New: new location for
hydromet waste

hydromet waste unknowns

gw pump and recycle

dam stability questions

rock buttressing

